

Remarks/Arguments:

The information disclosure statement (IDS) filed on 2/19/02 disclosed European Patent Application No. EP 0 905 608 A1 ("the '608 application") which was based on Japanese Laid-Open Patent Application No. 11-151444 ("the '444 application"). Although the Office Action states that the information contained in the IDS was not considered, it is presumed that only the '444 application was not considered as the '608 application was cited by the Office Action in rejecting the pending claims. To the best of Applicant's knowledge, the '444 application does not contain any relevant disclosure that is not also included in the '608 application. As the '608 application is of record, there is no need by Applicant to resubmit the '444 application.

In the specification, the paragraphs [0020], [0044], [0045], and [0106] have been amended in accordance with the requirement by the Office Action to capitalize "Java", and to accompany it with generic terminology. None of the amendments add any subject matter that was not explicitly or inherently found in the application as filed. As such, no new matter was added.

Claims 1-18 remain in this application. Claims 1, 11, 13, 14 and 16 were amended herein as required by the Office Action to overcome the 35 USC §112 rejection.

Claims 1-3, 9-12 and 14-15 were rejected under 35 U.S.C. §102(b) as being anticipated by Maeda et al. (EP 0905608A1, hereinafter "Maeda"). Claims 4, 6-8, 13, 16, and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Maeda in view of Davis (US 5862393). Claims 5 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Maeda in view of Davis, and further in view of Danforth (US 5493680). The applicant respectfully traverses these rejections at least because the cited references do not, taken individually or in combination, teach, suggest, or motivate all the recitations of any of the rejected claims.

The present invention relates to a control apparatus that controls the uninstallation of control software from a master device where the master device uses that software to control one or more slave devices. It is important to note however, that the control apparatus does not immediately remove such control software when a slave device is removed from the master device.

Immediately removing the control software can result in unnecessary removal and replacement of control software. Instead, the control apparatus waits a pre-determined time, and if the slave device is not replaced during that time, the control apparatus removes the control software. As

such, the present invention uses timing means to measure how much time has elapsed time since the disconnection of a slave device, and to determine whether or not to uninstall control software based on the elapsed time.

Maeda discusses providing a peripheral device with the ability to cause a host computer to take actions associated with disconnection of the peripheral device without actually disconnecting the peripheral device. Having made the host react to its apparent disconnection, the peripheral device causes the host computer to take actions associated with initial connection of a device even though the device was previously connected.

Maeda does discuss three time intervals, T1, T2, and T3. However, T1 is simply the time required from when a controller starts to output 5 volts for the voltage on a signal line to exceed a given voltage V_{oh} , i.e. the threshold voltage that is considered the lower limit of a "high" voltage. [Maeda, column 7, lines 51-54.] Similarly, T2 is simply the amount of time required for the voltage on the signal line to drop below a given voltage V_{ol} , i.e. the threshold voltage that is considered the upper limit on a "low" voltage, once the voltage applied by the controller is removed by disconnection of the device of which is a part. [Maeda, column 8, lines 8-11.] T3 is the time required for the host computer to delete a driver for the peripheral device. [Maeda, column 8, lines 34-37.]

Maeda also discusses counting a time interval $T2+T3$. [Maeda, column 9, lines 13-15.] However, it does not use the counted interval to determine if a driver should be uninstalled, but rather counts the interval to determine when to force the host computer to query the peripheral device and install a driver. It is important to note that T3 is the time it takes for the host to uninstall a driver. As such, the time interval $T2+T3$, by design, does not end until after the driver is uninstalled, and thus cannot be a factor in determining when to initiate uninstallation of the driver. Moreover, Maeda makes it clear that the driver is cleared by the host computer when the device is disconnected, not after a pre-determined amount of time has elapsed after the device is disconnected. [Maeda, column 11, lines 11-16.]

It should also be noted that it is the controller in the peripheral device which counts the interval $T2+T3$, but the host computer that performs driver uninstallation. The host computer reacts to voltage changes on the signal line, not to elapsed time intervals.

Since Maeda counts a time interval to determine when to initiate installation of a driver rather than when to initiate uninstallation, it does not anticipate any claim reciting that elapsed time since disconnection be used to initiate uninstallation. Moreover, none of the other cited references make up for the inadequacy of Maeda in regard to such a recitation, and thus the cited references do not obviate any claims that include such a recitation. As will be seen in the following paragraphs, all the pending claims include such a recitation so are not anticipated or obviated by the cited references.

Claim 1 recites in part: "the timing control means controls the uninstall means to start uninstalling after the measured elapsed time reaches a first predetermined time, if the disconnected slave device is not reconnected to the system before the measured elapsed time reaches the first predetermined time." Although claim 1 was amended to recite that uninstallation does not begin until the first predetermined time has elapsed, no new matter was added as that limitation was implicit in claim 1 as filed. This follows from the fact that the determination as to whether the slave device has not been reconnected during that interval until after the interval has elapsed, and that such a determination needs to be made before uninstallation is started. As discussed above, Maeda discusses waiting to begin installation, but does not teach, suggest, or motivate a timing control means that waits for a measured elapsed time to reach a predetermined time to begin uninstallation. Thus, Maeda does not anticipate claim 1 or any claim dependent on claim 1.

Similarly, claims 11 and 14 each recite in part: "an uninstall step for uninstalling control software for controlling the disconnected slave device, the uninstall step being started after the measured elapsed time reaches a first predetermined time, if reconnection of the disconnected slave device is not detected before the measured elapsed time reaches the first predetermined time." As with claim 1, Maeda does not teach, suggest, or motivate waiting to start an uninstall step until after a predetermined amount of elapsed time has been measured. Thus Maeda does not anticipate claim 11, claim 14, or any claim dependent on claim 11 or claim 14.

Claim 1 also recites: (a) that the uninstall control apparatus is connected with a master device; (b) that the control apparatus comprises the timing control means and the uninstall means controlled by the timing control means; and (c) that the timing control means controls the

uninstall means to start uninstalling only if the slave device is still disconnected. As such, the control apparatus cannot be part of the slave device as it cannot be simultaneously connected and disconnected from the master device. Although this was implicit in claim 1 as originally filed, claim 1 was amended to add an explicit recitation of that fact. Similar amendments were made to claims 11 and 14. In Maeda, the controller is part of the slave device, and the timing discussed also occurs in the slave device. As such, Maeda does not anticipate any of claim 1, 11 and 14.

Claim 3 recites in part: "the uninstall process executed by the uninstall means includes a plurality of stages, and the timing control means controls the uninstall means to execute each of the plurality of stages in response to the elapsed time measured by the timing means." The Office Action asserts that claim 3 is anticipated by Maeda, and particularly by column 8, lines 16-44 of Maeda. However, that portion of Maeda discusses figure 5C of Maeda, i.e. the voltage wave form of the signal line resulting from the action of the controller to cause the host computer to think the peripheral device is disconnected. Although it breaks the waveform up into intervals, those intervals are not part of a process including stages which are each executed in response to a measured amount of elapsed time. Maeda describes uninstallation as occurring within the interval T3, i.e. as a single stage. As such, claim 3 is not anticipated by Maeda, nor are any claims dependent on claim 3.

Similarly, claims 12 and 15 recite in part: "the uninstall step includes a plurality of stages, and each of the plurality of stages are executed when the elapsed time reaches a predetermined time preset for the stage. As with claim 1, despite the assertions by the Office Action, Maeda describes uninstallation as occurring within the interval T3, i.e. as a single stage. Moreover, Maeda does not teach executing each of a plurality of stages when the elapsed time reaches a predetermined time preset for the stage as it does not teach presetting a time for each stage of a plurality of stages. As such, claims 12 and 15 are not anticipated by Maeda, nor are any claims dependent on claims 12 and 15.

Claim 4 recited in part: "the timing control means, when the reconnection of the slave device is detected before the uninstall means completes the uninstall process, stops the uninstall process by the uninstall means and gives the restoration means an instruction to restore the data modified

by the time when the reconnection is detected to a state before starting of the uninstall process." The Office Action asserts that Davis satisfies this recitation, and that it would have been obvious to modify Maeda to incorporate the relevant portions of Davis. However, despite that assertion, Davis does not teach, suggest, or motivate stopping the uninstall process if reconnection of a slave device is detected before the process is completed. More specifically, Davis does not contemplate uninstallation of control software on disconnection of a device and thus cannot teach, suggest, or motivate stopping a process which it does not use.

Moreover, the claim recites restoration of data modified in the uninstall process. Although Davis does discuss supplying device information from the device driver to the device, the device information provided is not data modified in the uninstall process. Once again, Davis does not have a process for uninstalling slave device control software. As such, it cannot restore data modified in a process that it doesn't have.

Similarly, claims 13 and 16 recite in part: "a restoration step for, when reconnection of the disconnected slave device is detected during the uninstall step, stopping the uninstalling and restoring data modified in the stages having been executed by the time when the reconnection is detected to a state before starting of the uninstalling." As with claim 4, the recitations of claims 13 and 16 are not anticipated or obviated by Davis.

As the Office Action acknowledges, the recitations of claims 4, 13, and 16 are not satisfied by Maeda, and as the foregoing paragraphs show that the inadequacy of Maeda is not overcome by combining it with Davis, claims 4, 13, and 16 are patentable over the cited references as are any claims dependent on claim 4, claim 13, or claim 16.

Claim 5 recites in part: "the control software to be uninstalled is described in an object-oriented language, the uninstall process executed by the uninstall means includes a stage for unloading classes which was loaded at the time when the control software was installed, and the timing control means controls the uninstall means to unload the classes when the elapsed time reaches a second predetermined time." The Office Action incorrectly asserts that a combination of Maeda, Davis, and Danforth obviates claim 5, and in particular relies on column 22, lines 19-24 of Danforth. That portion of Danforth describes a "somUnregisterClass" method which unloads a specified class file and removes the class from the SOM registry. However, despite the assertion

by the Office Action, Danforth does not teach, suggest, or motivate unloading classes after a second pre-determined time when uninstallation of control software began at a first pre-determined time. Moreover, the reason given by the Office Action does not justify the combination of references as maintaining and reusing driver code does not require that the control software be described in an object-oriented language, or that class information be unloaded at a time other than when control software is uninstalled. As such, the cited combination does not obviate claim 5 or any claim dependent on claim 5.

Claim 6 recites in part: "the uninstall process executed by the uninstall means includes a stage for deleting registration information on the control software being the target for the uninstall process, the registration information being generated at the time when the control software was installed, and the timing control means controls the uninstall means to delete the registration information when the elapsed time reaches a third predetermined time." The Office Action asserts that recitations of claim 6 are taught in column 11, lines 1-16 of Maeda. However, that portion of Maeda discusses clearing a driver in response to a change in voltage on a signal line. It does not does not teach, suggest, or motivate deletion of registration information after a third pre-determined time when uninstallation of control software began at a first pre-determined time. As such, the cited combination does not obviate claim 6 or any claim dependent on claim 6.

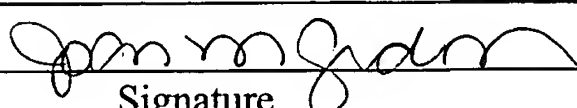
Claim 8 recites in part: "acquisition means for acquiring control software and storing the control software in both auxiliary storage means and the storage means, wherein the uninstall process executed by the uninstall means includes a stage for deleting the control software from the auxiliary storage means, and the timing control means controls the uninstall means to delete the control software from the auxiliary storage means when the elapsed time reaches a fifth predetermined time." The Office Action asserts that the recitations of claim 8 are taught by column 11, lines 1-38 of Maeda. That portion of Maeda discusses clearing a driver to free up memory, and also installing a new driver from a removable media. However, it does not teach deleting the control software from the removable media, or from any storage means other than memory. Since it does not, even in combination with Davis, teach deletion from two storage means, it does not obviate claim 8.

Claim 9 recites in part: "wherein the timing control means controls the uninstall means to execute each of the plurality of stages at a predetermined time set for the stage, wherein the uninstall control apparatus further comprises: updating means for updating the first predetermined time and at least one of the predetermined times set for the plurality of stages in accordance with external designation." The Office Action asserts that this is anticipated by the disclosure of Maeda found in column 13, lines 6-11. However, that portion of Maeda discusses causing the host computer to install driver software by forcing an uninstallation and installation cycle. It doesn't teach, suggest, or motivate updating two pre-determined times, where said pre-determined times are used to determine when different stages of an uninstall process begin. As such, Maeda does not anticipate claim 9.

Claim 10 recites in part: "update information reception means for receiving update information on control software, wherein when the update information reception means receives update information on control software and disconnection of the slave device corresponding to the control software is detected for the first time after receiving the update information, the timing control means controls the uninstall means to execute the uninstall process without controlling the process based on the elapsed time." The Office Action asserts that the recitations of claim 10 are anticipated by column 13, lines 6-11 of Maeda. That portion of Maeda does discuss forcing an uninstallation and installation cycle if a program on the peripheral device is updated. However, that cycle is performed in the same manner as it is when the program on the peripheral device is not update. It does not teach or suggest modifying the control apparatus to operate differently depending on whether update information on control software has been received or not. More particularly, it doesn't contemplate controlling uninstallation such that uninstallation only occurs after a pre-determined time if update information has not been received, and occurs regardless of whether a pre-determined time has elapsed if update information has been received. As such, Maeda does not anticipate claim 10.

It is believed that the case is now in condition for allowance, and an early notification of the same is requested. If the Examiner believes that a telephone interview will help further the prosecution of this case, he is respectfully requested to contact the undersigned attorney at the listed telephone number.

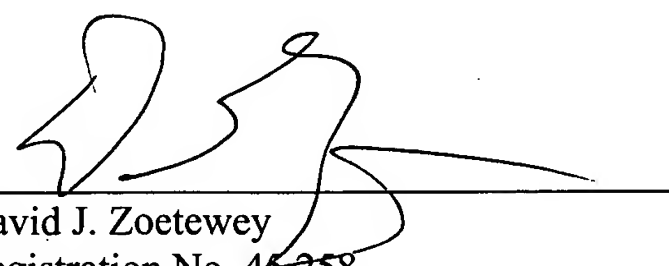
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By: Joan M. Gordon

Signature

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Very truly yours,

SNELL & WILMER L.L.P.



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